

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claim 43 is rejected under 35 U.S.C. 102(b) as being clearly anticipated by Wilding et al. (USP 5,637,469).

Wilding et al. teach a microfluidic device(10) comprising a sample receiving chamber(16A), capillary flow channels(20), reaction chamber(164,166), branching paths(40) and a vent(16C). Column 3 lines 31-42 teach the sample flows through the system by capillary action. Pump(52) is used for flushing the previous sample from the device and not to control the flow of the sample thus meeting the requirement of “exclusively by capillary force.” Vent(16C) is in communication with each reaction chamber(164,166) and culminates in a single vent(16C). The branching paths(40) have been read on the claimed “distributor channels.”

The claimed “sample receiving chamber” has been read on the taught **chamber(16A)**. The claimed “distributor channel” has been read on the taught **branching paths(40)**. The claimed “reaction chamber” has been read on the taught **reaction chamber(164,166) and the paths(40) containing growth media**. The claimed “vent opening for each has a connecting channel extending therefrom” has been read on the taught **vent(16C)**.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 11-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wilding et al. in view of Columbus (USP 4,426,451).

See Wilding et al. supra.

Wilding et al. are silent to the claimed "capillary-force prevention means" or capillary stops.

Columbus teaches a capillary flow reaction device. Column 1 lines 34-48 teach it is desirable to modify a capillary flow device to temporally stop the capillary fluid movement to permit residence time for the reaction of the sample with the analyte and resume capillary flow. Columbus teaches the slowing of the capillary flow is achieved by widening the channel in the appropriate section.

It would have been within the skill of the art to modify Wilding et al. in view of Columbus and widen the channel to reduce the capillary force to gain the above advantages.

The modified device of Wilding et al. is further silent to the claimed specific capillary channel configuration of claims 16-20.

The court decided In re Boesch (205 USPQ 215) that optimization of a result effective variable is ordinarily within the skill of the art. A result effective variable is one that has predictable, well known and expected results. The selection of the configuration of a capillary channel is a result effective variable that would have the predictable, well known and expected results of selecting the desired volume and speed of the sample.

Allowable Subject Matter

Claim 24 is allowed.

Response to Arguments

Applicant's arguments with respect to claims 12-20 and 43 have been considered but are moot in view of the new ground(s) of rejection.

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Lyle A. Alexander whose telephone number is 571-272-1254. The examiner can normally be reached on Monday, Tuesday and Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jill Warden can be reached on 571-272-1267. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 1797

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Lyle A Alexander/
Primary Examiner, Art Unit 1797

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